

REMARKS

Claims 12-20 are now pending and claims 1-11 are canceled.

Claims 12-20 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 1,023,157 ("LaFeuille") in view of U.S. Patent No. 1,995,966 ("DeLemme"), for the reasons set forth at paragraph 2 of the Office Action.

Claim 12 recites a method of humidifying material wherein the material is introduced into an annular space between a first rotatable cylinder having a plurality of first blades extending radially outward from an exterior surface of the first cylinder and a second rotatable cylinder having a plurality of second blades extending radially inwardly from an interior surface of the second cylinder. The second cylinder is substantially coaxial with the first cylinder and the first cylinder is disposed inside of the second cylinder such that the exterior surface of the first cylinder and the interior surface of the second cylinder define the annular space. The first and second cylinders are rotated such that material falls from at least some of the second blades extending radially inwardly from the second cylinder onto the first cylinder and material then falls from at least some of the first blades extending radially outwardly from the first cylinder onto the second cylinder. The material is conveyed in the annular space from the inlet end of the first cylinder and inlet end of the second cylinder toward the outlet end of the first cylinder and outlet end of the second cylinder, and moisture is applied to the material in the annular space.

The Office Action recognizes that LaFeuille is directed to a drying apparatus, and thus does not disclose the feature of delivering moisture to the material within the

apparatus. However, the Office Action alleges that it would have been obvious to use the rotary drier disclosed in LaFeuille as a rotary humidifier in view of the teachings of DeLemme. Applicant respectfully submits that the modification of LaFeuille proposed by the Examiner would change the principle of operation of LaFeuille's invention, and therefore the teachings of the references are not sufficient to render the claimed method *prima facie* obvious. (M.P.E.P §2143.01).

In particular, LaFeuille discloses a drying process wherein hot gases are forced by a fan 3 into an internal cylinder 2, and then pass through close-meshed metallic cloth which covers the internal cylinder 2 in order to pass through and dry material which has fallen on the outer periphery of the internal cylinder 2 (columns 2 and 3.) The material being dried is moved within an annular space between the outer periphery of inner cylinder 2 and the inner periphery of outer drum 1.

In contrast to the invention disclosed in LaFeuille, DeLemme is directed to an apparatus in which a substance to be treated is contained in one or more compartments or cells which are arranged to be rotated and which are independent of each other such that the substance undergoing treatment is not passed from one cell to another but always remains in the same cell (column 1, lines 6-18.) Thus, DeLemme is not directed to an apparatus in which the substance to be treated is circulated from compartment to compartment around the center of rotation during the rotation. Accordingly, the principle of operation of DeLemme is completely different from the principal of operation disclosed in LaFeuille, and therefore any modification of LaFeuille based on the teachings of

DeLemme would change the principle of operation of LaFeuille. Accordingly, the teachings of LaFeuille and DeLemme are not sufficient to render the claims *prima facie* obvious. Furthermore, the novel combination of features claimed in Applicant's claim 12, including applying moisture to material in the annular space, is neither taught nor suggested by the combination of LaFeuille and DeLemme since DeLemme does not even disclose an annular space between an inner cylinder and an outer cylinder, and LaFeuille only discloses drying material by subjecting the material to a current of hot gases that are passed from within an internal cylinder through openings in the internal cylinder into the annular space. LaFeuille actually teaches away from applying moisture to the material since LaFeuille is concerned with removing moisture by drying with hot gas.

For at least the above reasons, Applicant respectfully submits that the method recited in claim 12 is non-obvious and therefore patentable over the combination of LaFeuille and DeLemme.

Dependent claims 13-20 are also patentable over the combination of LaFeuille and DeLemme, for the same reasons as discussed above with regard to claim 12, and moreover for the additional features that they recite.

In particular, with regard to dependent claim 13, Applicant's claimed invention is directed to a novel combination of features including different amounts of moisture being applied to the material at different locations in the annular space. The Office Action simply states that one of ordinary skill would have optimized the application amount/location of moisture through routine experimentation in order to ensure complete

and thorough humidification of the treated material. Applicant respectfully submits that neither LaFeuille nor DeLemme provide any teaching or suggestion to apply different amounts of moisture to the material at different locations in the annular space. LaFeuille discloses forcing hot gases from within internal cylinder 2 outwardly through openings in the internal cylinder 2 to dry material laying on the outer periphery of the internal cylinder

2. DeLemme does not even disclose an annular space between an internal cylinder and an external cylinder, and moreover, actually teaches away from an apparatus wherein a substance is treated as it is circulated from compartment to compartment around a center of rotation. Accordingly, Applicant respectfully submits that the conclusion of obviousness as to claim 13 is based on improper hindsight reasoning since it relies upon knowledge that is gleaned only from the Applicant's disclosure.

Dependent claim 14 is directed to a novel combination of features including the feature of moisture being applied to the material in the annular space as atomized droplets. The Office Action states that one of ordinary skill would have delivered the material liquid in the form of atomized droplets since this is conventionally the form in which liquid substances are delivered to material to be humidified, i.e., from a nozzle/sprayer. As discussed above, Applicant respectfully submits that DeLemme actually teaches away from the claimed combination of features in claim 14 since DeLemme is not concerned with an apparatus in which the substance to be treated is conveyed from compartment to compartment around the center of rotation. Furthermore, neither DeLemme nor LaFeuille discloses or suggests a method where moisture is applied to material in the annular space

between an inner cylinder and an outer cylinder as atomized droplets. In LaFeuille, hot gases are forced from within the internal cylinder 2 through openings in the internal cylinder into the annular space between the internal cylinder and the outer cylinder. LaFeuille does not provide any disclosure or suggestion of a nozzle or other device for forming atomized droplets within the annular space between the internal cylinder 2 and the outer drum 1.

For at least the above reasons, Applicant respectfully submits that dependent claims 13-20 are patentable for the same reasons as independent claim 12, from which they depend, and moreover for the additional features they recite. Withdrawal of all rejections under 35 U.S.C. §103(a) is therefore respectfully requested.

Prompt issuance of a Notice of Allowance is earnestly solicited. In the event any questions arise regarding this communication or the application in general, please contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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